

SPECIFICATION

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[**CREATION OF A DATABASE CONTAINING PERSONAL HEALTH CARE PROFILES**]

Cross Reference to Related Applications

The present application claims priority to United States Provisional Applications Serial Nos. 60/236 661, 60/236 662, 60/236 663, 60/236 875, and 60/236 876, all filed 29 September 2000, and United States Provisional Application Nos. 60/263 165 and 60/263 221, both filed 23 January 2001. The above applications are expressly incorporated herein by reference. Further, the present application expressly incorporates herein by reference the applications entitled "Systems And Methods For Assessing Vascular Health", "Systems And Methods For Assessing Vascular Effects Of A Treatment", "Systems And Methods For Screening For Adverse Effects Of A Treatment", "Decision Support Systems And Methods For Assessing Vascular Health", and "Systems And Methods For Investigating Blood Flow", which are being filed on the same date as the present application.

Background of Invention

[0001] *Technical Field. The present invention relates to the creation of a database containing health care information about one or more individuals. More specifically, this invention relates to the creation of a database containing one or more personal health care profiles that include information relating to personal health care data, personal perceptions of clinical*

[0002]

Background Information. The nature and role of pharmaceutical research and development ("R&D") and marketing has changed dramatically in recent years. The

old R&D paradigm was to discover new compounds and then develop drugs that would be approved and marketed. In the new paradigm, the pharmaceutical industry first identifies the clinical needs of the market, directs R&D activities to find drugs that meet these needs and then markets the drug for specific patient types.

[0003] In the old model, the most important market data was the size and growth of the market, and then targeting and compensating the sales force. In the new model, those data are still required, but much greater detail is needed with regard to the patient. Previously it was sufficient to know whether a patient suffered from, for example, diabetes. Now the companies need to know all the other conditions and risk factors that the patient has, in detail, and they need to track those characteristics over time. Increasingly, drugs are being developed for smaller niches of the patient population, and resultingly, more detailed information must be used.

[0004] United States pharmaceutical companies spend more that \$350 million a year on market research information for prescription drugs and more than \$1 billion a year on market research related to non-prescription health care products. An additional \$15 billion is spent on clinical research, 15% of which is wasted due to failed research programs. A significant cause of these failures is poor selection of participant subjects. This inefficiency persists in spite of the fact that pharmaceutical companies spend over \$100 million annually profiling R&D participant subject selection. Even with all this expense, there remains a need for products and services that track a combination of personal health care, personal perceptions of interactions with health care providers, and health care behavior. This need exists for both snapshot and longitudinal data in support of marketing and clinical research.

[0005] The consumer health care sector is diverse, covering area ranging from over-the-counter products that were previously only available under prescription, to vitamins, mineral supplements, contact lens solutions, toothpaste for sensitive teeth, medicated shampoo, creams for suntan and insect bites. There is a present

need for longitudinal data that allows manufacturers and other concern parties to assess and better market to this sector.

[0006] Polling indicates that seventy million Internet users in the United States currently search the web for health information. This number is expected to grow at a rate of 18% or greater per year, compared to approximately 11% for general web use. Large numbers of people have demonstrated a willingness to provide details of their medical history via Internet sites. *See e.g.*, <http://www.wellmed.com>, and <http://www.98point6.com>. The present invention exploits such trends to address the presently unmet need for detailed, current, longitudinal health information.

[0007] Health care information about individuals is collected by numerous organizations, but the collected information is fragmented and limited in scope and duration. Medical care delivery systems generally have access to the medical records of their patients sporadically supplemented by information from others such as the patient, insurance companies, and other health care practitioners. Much of the information contained in these records is related to and entered for purposes of obtaining maximum reimbursement from insurance companies or government programs and/or medico legal considerations. Insurance companies and government programs generally have access to a patient's records related to reimbursement of medical care delivery systems sporadically supplemented by clinical records designed to justify charges. Retail companies and financial institutions collect information relevant to health care, but that incomplete information is focused on payment and marketing considerations instead of the health of the purchaser. Some companies have focused on creation of a unified electronic clinical medical record for individuals. These attempts focus on including all clinical information from all available sources, and thus incorporate information directed to claims processing, maximum reimbursement coding, and malpractice protection. Such attempts have not attempted to collect systematically information from the patient regarding clinical interactions and health related behavior. Particularly, information is needed about the intercurrent health concerns, conditions, self treatments, and perceptions of the individual between and

contemporaneous with the individuals encounter with health care providers and the health care system.

Summary of Invention

[0008] In a preferred embodiment, the present invention takes the form of a process that is designed to create, populate and update a database with comprehensive information regarding personal health care data, personal perception of interactions with health care providers data, and personal health care behavior data for at least one profile subject. Data is stored in a personal health care profile for each profile subject.

[0009] In at least one embodiment, members of a candidate population of interest to a health care data recruiter are targeted by advertisements on Internet sites found to be of interest to members of the candidate population. The advertisements link volunteers to the health care data recruiter's Internet site where potential personal health profile subjects are screened from volunteers through use of health care screening data provided by the volunteers and received by the health care data recruiter through the recruiter's Internet site.

[0010] In a further aspect of the invention, a profile subject is prompted to provide information and answer questions related to the personal health care of that subject and to authorize access to the records, *e.g.*, medical records or clinical medical records, of the profile subject held by a health care third party record holder, *e.g.*, a family doctor. Completed authorizations for access to the medical records, along with requests for a copy of the corresponding records are forwarded to the health care third party record holders. Copies of the medical records held by the health care third parties holders are obtained. Key data is extracted from the medical records and is stored in a database as a personal health care profile. Subsequently, updated personal health care history information about the profile subject is requested. An updated personal health care profile is generated using the existing current profile and the updated information.

[0011]

In a further embodiment, a profile subject is prompted to provide information

and answer questions related to the personal interactions of the profile subject with health care providers. In a preferred embodiment, the health care providers include practitioners, *e.g.*, a family doctor, and medical care delivery systems, *e.g.*, a pharmacy. Such information is provided shortly after the profile subject has such interactions. In a preferred embodiment, the profile subject is prompted to authorize access to the records, *e.g.*, medical records, of the profile subject held by a health care third party record holder, such as a family doctor or pharmacy. Completed authorizations for access to the medical records, along with requests for a copy of the corresponding records are forwarded to the health care third party record holders. Copies of the records held by the health care providers are obtained. Key data is extracted from the records of the profile subject and is stored in a database as a personal health care profile. Subsequently, updated personal interaction of the profile subject with health care providers is requested. An updated personal health care profile is generated using the existing current profile and the updated information.

- [0012] In a further embodiment, a profile subject is prompted to provide information and answer questions related to the health care behavior of the profile subject. The profile subject is prompted to provide information regarding (1) use of health care products such as prescription drugs, over the counter medications, vitamins, dietary supplements, (2) subject compliance with doctor's instructions, and/or (3) lifestyle information related to health such as eating, drinking and exercise. In a preferred embodiment, the profile subject is prompted to authorize access to the consumer purchase information of the profile subject held by third parties such as pharmacies, credit card companies, grocery stores, financial institutions, etc. Completed authorizations for access to the consumer purchase information of the profile subject, along with requests for a copy of the corresponding information are forwarded to the third parties having the information. Copies of the information held by the third parties are obtained. Subsequently, updated detailed personal data, in the form of the health care behavior data is requested. An updated personal health care profile is generated using the existing current profile and the updated information.

[0013] In those embodiments where both objective clinical data and subjective data are collected, useful information from the viewpoint of the profile subject can promote insights that objective medical records are not typically designed to reveal or facilitate. For example, indication of a patient's misperception regarding diagnosis may provide insight into later behavioral complications, e.g., depression evidenced by inconsistent compliance with a treatment program. Even objectively correct diagnosis, treatment regimens, and prognosis can be of little benefit to a subject who misunderstands such information. Insight into the reasons for such misunderstanding can be gleaned from longitudinal tracking of the personal perceptions of the profile subject correlated to objective medical records.

[0014] Similarly, those embodiments where both objective clinical data and data regarding health care behavior are collected can facilitate the formation and testing of hypotheses regarding the impact of health care behavior on the effectiveness of clinical treatment. For example, longitudinal data on health care behavior in combination with clinical data could provide indication of a causal relationship between the health care behavior and recurrence of symptoms. Typically, such indications are not readily apparent from medical records alone.

Brief Description of Drawings

[0015] In the following, the invention will be described in greater detail by way of examples and with reference to the attached drawings, in which:

[0016] Figure 1 is a block diagram of an exemplary substitute fulfillment system in accordance with a preferred embodiment of the present invention;

[0017] Figure 2 is an exemplary flowchart of the overall method for gathering data in accordance with a preferred embodiment of the present invention;

[0018] Figure 3 is an exemplary flowchart for gathering screening data for one or more profile subjects in accordance with a preferred embodiment of the present invention;

[0019]

Figures 4A–4O are exemplary screen printouts used to gather screening data in

accordance with a preferred embodiment of the present invention;

[0020] Figure 5 is an exemplary flowchart for gathering personal health care data from a profile subject in accordance with a preferred embodiment of the present invention;

[0021] Figure 6 is an exemplary flowchart for gathering personal perceptions of interactions with medical care providers data from a profile subject in accordance with a preferred embodiment of the present invention; and

[0022] Figure 7 is an exemplary flowchart for gathering health care behavior data from a profile subject in accordance with a preferred embodiment of the present invention.

Detailed Description

[0023] As required, detailed embodiments of the present invention are disclosed herein. However, it is to be understood that the disclosed embodiments are merely exemplary of the invention that may be embodied in various and alternative forms. The figures are not necessarily to scale, some features may be exaggerated or minimized to show details of particular components. Therefore, specific structural and functional details disclosed herein are not to be limiting, but merely as a basis for the claims and as a representative basis for teaching one skilled in the art to variously employ the present invention.

[0024] Furthermore, elements may be recited as being "coupled;" this terminology's use contemplates elements being connected together in such a way that there may be other components interstitially located between the specified elements, and that the elements so specified may be connected in fixed or movable relation one to the other. Certain components may be described as being "adjacent" to one another. In these instances, it is expected that a relationship so characterized shall be interpreted to mean that the components are located proximate to one another, but not necessarily in contact with each other. Normally there will be an absence of other components positioned there between, but this is not a requirement. Still further, some structural relationships or orientations may be designated with the

word "substantially." In those cases, it is meant that the relationship or orientation is as described, with allowances for variations that do not effect the cooperation of the so described component or component.

[0025] Referring to Figure 1, a block diagram of an exemplary system for creating, populating and updating data relating to at least one profile subject 26 according to an embodiment of the present invention is illustrated. The data collection system 10 comprises a server 12 and a database 14, e.g., a database engine. As known to one skilled in the art, the server 12 can be one or more servers and can include the database 14. The server 12 manages the system 10 and maintains the database 14. The server 12 gathers or receives data for the database 14, stores the data in the database 14, and updates the data in the database 14. In a preferred embodiment, the server 12 generates a personal health care profile for each profile subject 26 and stores data associated with the profile subject 26 in the personal health care profile. The server updates the personal health care profile for a profile subject 26 when the server 12 receives updated or new information associated with the profile subject 26. An updated personal health care profile is generated using the existing current profile and the updated information.

[0026] To gather the data, the server 12 communicates with a profile subject 26 or a third party 30 via a telephone network 18, e.g., a public telephone network, and/or via a computer network 20, e.g., the Internet. One or more communication links 22, 24 couple the server to the telephone network 18 and to the computer network 20, respectively. In a preferred embodiment, the server 12 is coupled to the telephone network 18 via one or more telephone communication links 28 and is coupled to the computer network 20 via one or more computer communication links 30, respectively.

[0027] In the example of communication over the telephone network 18, a worker 28 may contact a profile subject 26 or a third party information provider 30 directly or the server 12 can use an interactive voice response technology (IVR) or system 16 to contact a profile subject 26 or such a third party 30. When a worker obtains data directly from a profile subject 26 or a third party 30, the worker stores data into

the database 14 via a computer connected to the server 12 via the computer network 20. When a server uses an IVR system 16, the server uses pre-recorded prompts to gather data from a profile subject 26 or a third party 30 and stores the data into the database 14. In a preferred embodiment, the IVR system 16 is on the server 12. In an alternate embodiment, the IVR system 16 is coupled to the server 12.

[0028] In the example of communication over the computer network 20, one or more screens or webpages display or prompt the profile subject 26 or third party 30 with questions and receives responses from the profile subject 26 or third party 30. In a preferred embodiment, the server 12 hosts an interactive data collection program, configured as a series of application service provider (ASP) pages to display information and receive information from the profile subject 26 or third party 30. The server 12 stores the data received from the profile subject 26 or third party 30 into the database 14. When the stored data is needed, the server 12 exports the stored data to other standard software packages, e.g., Excel. In an alternate embodiment, the server 12 uses applets to gather data from the profile subject 26 or a third party 30. In yet another alternate embodiment, the server 12 uses email to gather data from the profile subject 26 or a third party 30.

[0029] In a preferred embodiment, each personal health care profile is coded so that the profile subject 26 is given a unique identifier. This identifier has no significance to third parties 30 and allows identification of each data record associated with a profile subject 26 without revealing personal information of the subject such as name, address, Social Security number, etc. Data regarding the profile subject 26 is entered into fields with descriptive tags such as date, time, doctor, type of test, test results, etc. Data is tagged and grouped together so that associations can be identified.

[0030]

Each personal health care profile can include different types of data or datasets. One dataset that can be stored in a personal health care profile is data related to personal health care data for a profile subject 26. In a preferred embodiment, this data includes personal health care data directed towards the

study subject matter and preferably includes data directed towards the study subject matter that is extracted from records, e.g., medical records or clinical medical records. The data from the records can include conditions and symptoms noted by trained health professionals in clinical interactions with the profile subject 26 and the results of tests (including laboratory tests) and measurements of the subject by trained health professionals. In another embodiment, the data extracted from the records is stored as another dataset in the personal health care profile.

[0031] Another dataset that can be stored in a personal health care profile is data related to perceptions of clinical interactions subject with health care providers by the profile subject 26. In a preferred embodiment, this data includes perceptions of clinical interactions with health care providers, *e.g.*, a doctor, and medical care delivery systems, *e.g.*, a pharmacy. The data can include the personal perceptions of quality of the medical care, customer satisfaction, information and advice from a doctor, and prescribed treatments by the profile subject 26. In the preferred embodiment, the personal health care profile also includes data directed towards the study subject matter that is extracted from records, *e.g.*, medical records or clinical medical records. For example, the data can include entries from a doctor's diary. In another embodiment, the data extracted from the records is stored as another dataset in the personal health care profile.

[0032] Another dataset that can be stored in a personal health care profile is data related the health care behavior outside the purview of medical care delivery systems of the profile subject 26. In a preferred embodiment, this data includes data from the profile subject 26 concerning his or her health care behavior and preferably includes data from third party records, such as data from pharmacies and grocery stores (*e.g.*, restaurant receipts, food purchases), and health clubs and personal trainers (*e.g.*, exercise records). In another embodiment, the data extracted from the third party records is stored as another dataset in the personal health care profile.

[0033] In a preferred embodiment, two or more of the datasets are combined to create the personal health profile. In an alternate embodiment, one or more datasets are

combined to create the personal health profile. The information in the personal health profile is systematically updated to provide an ongoing perspective. The use of the telephone network 18 and computer network 20 permits rapid and cost efficient creation and updating of personal health profiles.

[0034] In a preferred embodiment, advertisements are placed at sites on the Internet by, or on behalf of, a recruiter wishing to recruit people as subjects for a database 14 of personal data profiles. Each advertisement is linked to an Internet recruiting portal, thus leading persons (volunteers) interested in participating to the next step in the process of establishing the database 14 of personal data profiles. The group of people having characteristics of interest to the recruiter is referred to as the "candidate population." The advertisements are placed at sites determined to be of interest to members of the candidate population. Advertisement sites need not be directly related to the type of research for which profile subjects 26 are being sought. As an example of Internet advertisement sites, travel-related websites would host advertisements targeted at populations suffering from motion sickness. In a preferred embodiment of the present invention in the health care domain, the profile subject 26 recruiting site is hosted on mirrored secure servers.

[0035] Referring to Figure 2, an exemplary flowchart of the overall method for gathering data according to an exemplary method of the present invention is illustrated. At step 40, a potential candidate, *e.g.*, a profile subject 26, is screened using a screening questionnaire. At step 42, data relating to personal health care of the profile subject 26 is gathered. At step 44, data relating to the personal perceptions of clinical interactions of the profile subject 26 is gathered. At step 46, data relating to the health care behavior of the profile subject 26 is gathered. At step 48, the server 12 stores the gathered data into the database 14.

[0036] In a preferred embodiment, a screener screens one or more profile subjects 26 or volunteers. The screener can eliminate profile subjects 26 who do not possess the characteristics of interest, *e.g.*, are not members of the candidate population, or can classify or characterize one or more profile subjects into one or more studies. The screener uses a screening questionnaire and responses from a profile

subject 26 to the questions in the screening questionnaire to screen the one or more profile subjects 26. In a preferred embodiment, a profile subject 26 completes the questionnaire via the computer network 20. In another preferred embodiment, a worker 28 completes the questionnaire based on responses from a profile subject 26 via the telephone network 18. In another preferred embodiment, a profile subject 26 fills out a questionnaire in person and a worker 28 enters the data into the database 14. In a preferred embodiment, the data from the screening step are held in a patient repository, preferably on the server 12. In an alternate embodiment, the data from the screening data is stored in a personal health care profile for each profile subject 26.

[0037] Referring to Figure 3, an exemplary flowchart for gathering screening data for one or more profile subjects 26 according to an embodiment of the present invention is illustrated. At step 50, a study password and authorization data is gathered from the profile subject 26. As illustrated in Figure 4A, the profile subject 26 is prompted for a password assigned to a given study, e.g., a diabetes study. As illustrated in Figure 4B, the profile subject 26 is prompted to authorize or to agree to the terms and conditions of the study.

[0038] At step 52, contact data is gathered from the profile subject 26. As illustrated in Figure 4C, the profile subject 26 is prompted for contact data which includes data relating to title, first name, family name, apartment number (if any), street number, street name, town or city, state, zip code, home telephone number, work telephone number, cell telephone number, and email address of the subject profile.

[0039] At step 54, demographic data is gathered from the profile subject 26. As illustrated in Figures 4D, 4E, 4F, and 4G, the profile subject 26 is prompted for demographic data which includes data relating to marital status, race information, work status, and education status of the subject profile, respectively.

[0040] At step 56, lifestyle data is gathered from the profile subject 26. As illustrated in Figures 4H, 4I, and 4J, the profile subject 26 is prompted for lifestyle data which includes data relating to smoking, physical activities, and the number of days the

physical health of a profile subject 26 was not good, respectively.

[0041] At step 58, data concerning the type of chronic conditions ever suffered by the profile subject 26 is gathered. As illustrated in Figure 4K, the profile subject 26 is prompted for data which includes data relating to whether the profile subject 26 has ever suffered from stroke, diabetes, high cholesterol, high blood pressure, allergies, heart problems, stomach or bowel problems, obesity, long term skin conditions, chronic sinuses, gum disease, lupus, etc.

[0042] At step 60, data concerning current and acute conditions is gathered. As illustrated in Figure 4L, the profile subject 26 is prompted whether the profile subject 26 still suffers from the acute condition or conditions entered in the previous step.

[0043] As step 62, data concerning current conditions currently being treated is gathered. As illustrated in Figure 4M, the profile subject 26 is prompted whether he or she is receiving treatment for a condition or conditions listed in the previous step.

[0044] At step 64, data concerning all current medication that the profile subject 26 is taking is gathered. As illustrated in Figure 4N, the profile subject 26 is prompted to list all current medications, including prescribed and non-prescribed medication, that the profile subject 26 is taken. The current medication includes prescribed and non-prescribed medications.

[0045] At step 66, data characterizing the medication listed in the previous step is gathered. As illustrated in Figure 4O, the profile subject 26 is prompted to characterize the medications listed in the previous step. The characterization of the medication includes the starting date that the person took the medication and if they took the medication on that day.

[0046] Using the gathered screening data, one or more profile subjects 26 are selected from among the volunteers based on correlation between the screening data and the candidate population characteristics. Disclosures and explanations regarding the recruitment program, directions for providing detailed personal data,

and directions for authorizing access to records held by third parties are provided to the selected one or more profile subjects 26. In a preferred embodiment, one or more of such disclosures, explanations, and direction are provided electronically, e.g., via the recruiter's Internet site, or via e-mail.

[0047] Referring to Figure 5, an exemplary flowchart for gathering personal health care data from the profile subject in accordance with an embodiment of the present invention is illustrated. At step 70, the profile subject 26 is prompted with one or more questions relating to the personal health care of the profile subject 26. Typically, the one or more questions are directed towards the study subject matter. At step 72, the profile subject 26 responds to each of the one or more questions.

[0048] At step 74, a determination is made if data is needed from one or more third parties 30. In a preferred embodiment, potential third party health care record holders include, but are not limited to, primary care physicians, hospitals, pharmacies, psychologists, licensed clinical social workers, and insurance companies. Typically, data from a third party 30 is data derived from one or more medical records. Medical records can include: health practitioner records including records of physicians, psychologists, nurse practitioners, physical therapists; prescription information from pharmacies; health facility records including hospital and hospice records; a list of illnesses; and test results. If no data is needed from a third party 30, for example, if the profile subject 26 has not received medical treatment from a doctor, then the data gathered from the profile subject 26 is saved at step 80.

[0049] If data is needed from a third party 30, then at step 76, authorization to obtain the data from the third party 30 is obtained from the at least one profile subject 26. In a preferred embodiment, authorization for accessing one or more records held by one or more third party is requested from the profile subject 26 and is received from the profile subject 26. In a preferred embodiment, the authorization is requested and received via the recruiter's Internet site. In another preferred embodiment, the authorization is offered as a downloadable form from the

recruiter's Internet site and received via mail or email. The authorization can be sent directly to the third party 30 having one or more records via mail or email or can be sent to the recruiter and then forwarded to the third party 30 via mail or email. In each embodiment, a received completed authorization is transferred to a third party 30 having the desired records along with a request for a copy of the corresponding records.

[0050] At step 78, data is obtained from the third party 30. Copies of one or more records held by a third party record holder are accepted from those third party record holders who have received the appropriate authorization and complied with the request for corresponding records. In a preferred embodiment, a medical record professional evaluates the records and provides a streamlined version of the medical record, e.g., extracts key data. In another preferred embodiment, subsequent to receipt of the records from third party record holders, a worker 28, e.g., a medical record professional, evaluates, sorts, and prepares chart material as a streamline version of the medical record.

[0051] At step 80, the data is stored in the personal health care profile for the profile subject 26. This data is entered directly into the database 14 using a keyboard, a mouse, or a voice recognition system.

[0052] At step 82, the data in the personal health care profile for a profile subject 26 is updated. An updated personal health care profile is generated using the existing personal health care profile and the updated detailed personal health care data provided by the profile subject 26. As required, new authorizations are obtained from the profile subjects 26 and transmitted to the appropriate third-party record holders. Where updated clinical data is provided, the same process described above for preparation of initial clinical records is undertaken to prepare updates to the personal health care data. The update can be done on a periodic basis, e.g., on a weekly basis, or event driven, e.g., after every doctor visit.

[0053] Referring to Figure 6, an exemplary flowchart for gathering the personal perceptions of interactions with medical health care providers by a profile subject in accordance with an embodiment of the present invention is illustrated. In a

preferred embodiment, the health care providers include practitioners, e.g., a doctor, and medical care delivery systems, e.g., a pharmacy. At step 90, the profile subject 26 is prompted with one or more questions relating to the personal perceptions of clinical interactions with a health care practitioner or health care facility, e.g., a primary care physician, a dentist, a hospital, etc. The personal perception of a clinical interaction includes: the personal perception of the profile subject 26 regarding the medical aspects of the interaction, e.g., what the profile subject 26 perceives as the health care provider's diagnosis, recommended treatment, or prognosis; and subject's perception of administrative aspects of the interaction, e.g., time spent waiting, convenience of insurance and billing procedures, even the availability of parking at the facility. For example, after a visit to a doctor the subject would be queried as to what type of information was provided by the doctor to the patient, e.g., did the doctor tell the patient his or her temperature, weight, etc.; the specific measurements provided by the doctor, e.g., overall cholesterol 260, blood pressure 110/80, etc. At step 92, the profile subject 26 responds to each of the one or more questions.

[0054] At step 94, a determination is made if data is needed from one or more third parties 30. In a preferred embodiment, potential third party health care record holders include, but are not limited to, primary care physicians, hospitals, pharmacies, psychologists, licensed clinical social workers, insurance companies, pharmacies, etc. Typically, data from a third party 30 is data derived from one or more medical records. Medical records can include: health practitioner records including records of physicians, psychologists, nurse practitioners, physical therapists; prescription information from pharmacies; health facility records including hospital and hospice records; a list of illnesses; and test results. If no data is needed from a third party 30, for example, if the profile subject 26 has not received medical treatment from a doctor, then the data from the profile subject 26 is saved at step 100.

[0055] If data is needed from a third party 30, then at step 96, authorization to obtain the data from the third party 30 is obtained from the at least one profile subject 26. In a preferred embodiment, authorization for accessing one or more records

held by one or more third party is requested from the profile subject 26 and is received from the profile subject 26. In a preferred embodiment, the authorization is requested and received via the recruiter's Internet site. In another preferred embodiment, the authorization is offered as a downloadable form from the recruiter's Internet site and received via mail or email. The authorizations can be sent directly to the third party 30 having one or more records via mail or email or can be sent to the recruiter and then forwarded to the third party 30 via mail or email. In each embodiment, received completed authorizations are transferred to a third party 30 having the desired records along with a request for a copy of the corresponding records.

[0056] At step 98, data is obtained from the third party 30. Copies of one or more records held by a third party record holder are accepted from those third party record holders who have received the appropriate authorization and complied with the request for corresponding records. In a preferred embodiment, a medical record professional evaluates the records and provides a streamlined version of the medical record, e.g., extracts key data. In another preferred embodiment, subsequent to receipt of the records from third party record holders, a worker 28, e.g., a medical record professionals, evaluates, sorts, and prepares chart material as a streamline version of the medical record.

[0057] At step 100, the data is stored in the personal health care profile for the profile subject 26. This data is entered directly into the database 14 using a keyboard, a mouse, or a voice recognition system.

[0058] At step 102, the data in the personal health care profile for a profile subject 26 is updated. An updated personal health care profile is generated using the existing personal health care profile and the updated personal perception of interactions by the profile subject 26 with health care providers. As required, new authorizations are obtained from the profile subject 26 and transmitted to the appropriate third-party record holders. Where updated clinical interactions are provided, the same process described above is undertaken to prepare updates to the personal health care profile. The update can be done on a periodic basis, e.g., on a weekly basis, or

event driven, e.g., after every doctor visit or pharmacy visit.

[0059] Referring to Figure 7, an exemplary flowchart for gathering the health care behavior of the profile subject in accordance with an embodiment of the present invention is illustrated. As step 110, the profile subject 26 is prompted with one or more questions relating to the health care behavior of the profile subject 26. For example, the profile subject 26 is prompted to provide information on a reasonably current basis regarding (1) use of health care products such as prescription drugs, over the counter medications, vitamins, dietary supplements, (2) subject compliance with doctor's instructions, and/or (3) lifestyle information related to health such as eating, drinking and exercise. At step 112, the profile subject 26 responds to each of the one or more questions.

[0060] At step 114, a determination is made if data is needed from one or more third parties 30. In a preferred embodiment, the profile subject 26 is prompted to authorize access to the consumer purchase information of the profile subject held by third parties 30 such as pharmacies, credit card companies, grocery stores, financial institutions, etc. If no data is needed from a third party 30, then the data from the profile subject 26 is saved at step 120.

[0061] If data is needed from a third party 30, then at step 116, authorization to obtain the data from the third party 30 is obtained from the at least one profile subject 26. In a preferred embodiment, authorization for accessing one or more records held by one or more third party is requested from the profile subject 26 and is received from the profile subject 26 who provides such data and authorization. In a preferred embodiment, the authorization is requested and received via the recruiter's Internet site. In another preferred embodiment, authorizations are offered as downloadable forms from the recruiter's Internet site and received via mail or email. The authorizations can be sent directly to the third party 30 having one or more records via mail or email or can be sent to the recruiter and then forwarded to the third party 30 via mail or email. In each embodiment, received completed authorizations are transferred to a third party 30 having the desired records along with a request for a copy of the corresponding

records.

[0062] At step 118, data is obtained from the third party 30. Copies of one or more records held by a third party record holder are accepted from those third party record holders who have received the appropriate authorization and complied with the request for corresponding records. In a preferred embodiment, a worker 28 evaluates the records and provides a streamlined version of the record, e.g., extracts key data. In another preferred embodiment, subsequent to receipt of the records from third party record holders, a worker 28 evaluates, sorts, and prepares chart materials to a streamlined version of the record.

[0063] At step 120, the data is stored in the personal health care profile for the profile subject 26. This data is entered directly into the database 14 using a keyboard, a mouse, or a voice recognition system.

[0064] At step 122, the data in the personal health care profile for a profile subject 26 is updated. An updated personal health care profile is generated using the existing personal health care profile and the updated health care behavior of the profile subject 26. As required, new authorizations are obtained from the profile subject 26 and transmitted to the appropriate third-party record holders. Where updated health care behavior is provided, the same process described above is undertaken to prepare updates to the personal health care profile. The update can be done on a periodic base, e.g., on a weekly basis, or event driven, e.g., after every doctor visit or pharmacy visit.

[0065] In a preferred embodiment, profile subjects 26 and third parties 30 are compensated for providing data. The compensation can be monetary or non-monetary. Monetary compensation can be made using an electronic payment system such as X.com's PayPal™ payment service, or by check. Non-monetary compensation can include, but is not limited to, access to personally relevant information, airline frequent flier miles, or discounts on merchandise or services.

[0066] In a preferred embodiment of the present invention in the health care domain, as a benefit of participation, a profile subject 26 is provided with secure access to

a structured abstract of their private personal health care profile. Upon request by the profile subject 26, the abstract is used to match the profile subject health concerns with publicly available Internet health care resources.

[0067] In alternate embodiments, the methods described above can be executed on a computer, processor, server, or computer readable medium. For example, the method that is described above that operate on a server by executing one or more sequences of one or more instructions contained in a main memory. Such instructions may be read into main memory from another computer readable medium. The term "computer-readable medium" as used herein refers to any medium that participates in providing instructions to a processor for execution. Such a medium may take many forms, including but not limited to, non-volatile media, volatile media, and transmission media. Non-volatile media include, for example, optical or magnetic disks. Volatile media include dynamic memory, such as main memory. Transmission media include coaxial cables, copper wire and fiber optics, including conductors that comprise a bus . Transmission media can also take the form of acoustic or electromagnetic waves, such as those generated during radio frequency (RF) and infrared (IR) data communications. Common forms of computer-readable media include, for example, a floppy disk, a flexible disk, hard disk, magnetic tape, any other magnetic medium, a CD-ROM, DVD, any other optical medium, punch cards, paper tape, any other physical medium, with patterns of holes, a RAM, a PROM (programmable ROM), and EPROM (electronically PROM) a FLASH-EPROM, any other memory chip or cartridge, a carrier wave, or any other medium from which a computer can read.

[0068] Various forms of computer-readable media may be involved in carrying one or more sequences of one or more instructions to processor for execution. For example, the instructions may initially be borne on a magnetic disk of a remote computer. The remote computer can load instructions into its dynamic memory and send the instructions over a telephone line using a modem. A modem local to computer system can receive the data on the telephone line and use an infrared transmitter to convert the data to an infrared signal. An infrared detector coupled to the bus can receive the data carried in the infrared signal and place the data on

the bus. The bus carries the data to the main memory, from which a processor retrieves and executes the instructions. The instructions received by the main memory may optionally be stored on storage device either before or after execution by the processor.

[0069] It should be recognized that various preferred embodiments of the present inventions that have been described are merely illustrative of the principles of this invention. Numerous modifications and adaptations thereof will be readily apparent to those skilled in the art without departing from the spirit and scope of the present invention.

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